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GEOGRAPHY AND HISTORY IN THE UNITED STATES*

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THAT geographic conditions have power in human affairs is known to all, but their scope and importance are appreciated by few. We cannot ascribe all that we do, or experience, to geographic sources, and we must draw our conclusions with caution, for personal and racial traits come in whose origin we cannot trace. We may safely reject, however, the phrase, "theater of history," as it is commonly used. The earth is more than a mere stage. Ground to stand on, a background to look at, and even machinery to produce new effects do not express the relation of earth to the human drama. The bond is closer, and might be called organic, bearing its share of the complication and mystery that belong to life everywhere.

The writer has elsewhere sought to show the greater relations which obtain between the American land and American life, and can here select but two or three examples which seem to have the force of types, and these will form a basis for the emphasis to be laid upon correlating these two great branches of knowledge in American schools.

We take our people of the western world as we find them. It is a race ancestrally molded by environment, but man must long be studied from the combined points of view of history, geography, and biology before the unknown geographic factor in the equation can be brought out. Given the early Americans, they were affected by local influences which told in the resources of rocks and soils, in climate, in lines of commerce, modes of communication, in the planting and growth of cities. We pass these and we pass also the less obtrusive but doubtless more compelling influences of sea, of relief, and of climate upon the inner man, upon thought, imagination, and moral convictions.

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We have taken certain larger regional, and indeed we might say national, exhibitions of geographic influence in the temperate portions of North America. In so doing we must remember that our history is short and that we see it in its making, in its more creative stages. But thus to see it is to have a blurred vision, it may be, of some of its most distinctive characters. Until recently we have had as a nation a migrating frontier, an ever-shifting "West," repeating with variations the features of frontier life, furnishing outlet from the more settled regions, and reflecting the influence of new conditions of society and of new products of the earth, back upon the older populations. Some of these older regions have seen swift changes, therefore, despite the persistence of their soils, their minerals, their reliefs, and their skies. Thus we have widening circles of adjustment in larger and larger fields.

Or, we may say that the process of adjustment is twofold. There are local adaptations, as in periods of first settlement when most of man's necessities are won from the soil at home; and there are adjustments in relation to other regions, hinging upon more favorable communications, and upon products of special regions, the law of competition coming in. The former sort are known and utilized in some measure in the teaching of our schools. We are but beginning to know the latter, and can know them only from the point of view of the historian and the economist.

Our first example is New England. Here nothing less than a revolution has taken place, and indeed it is in progress before our eyes. When the early colonists sought the protected waters of the shore and the fertile lowlands of the Connecticut, or cleared their rough fields and challenged the uplands to give them a living, or snared it beneath the salt waters, there was abundant geographic influence and there was genuine adjustment to the conditions of the land. But if we look at the New England of to-day, we see many new things. The fishing has waned and what there is concentrates itself chiefly at one port. There has been a decline, so called, of agriculture, but perhaps no diminution of the value of the products of the soil. Boston is said to be second in this particular among the towns of Massachusetts. That the growths of the greenhouse must be counted in to make this true, only points to the great fact of specialization of tillage. It is now tobacco in the Connecticut Valley, cranberries on Cape Cod, and truck farming adjacent to innumerable cities, instead of a toilsome struggle to raise breadstuffs everywhere. Fields too steep and too rough with boulders to favor the plow are relapsing into forest, to become valuable to

the next generation at least for refreshment, and to later generations, it may be, for lumber as well. Meantime the population of the region has increased, its wealth has grown, and its array of comfortable conditions of living is out of all comparison with the days of the fathers. What now are the larger connections in this chain of events? We find them in early migrations to New York and Ohio, the "West"; in the wheat fields of the Genesee Valley; in the expansive acres of Illinois and Iowa, and in the silver and gold of Colorado and California. Certain industries could be better carried on if New England men and others were to follow the fleeting limit of our country toward the setting sun, and the old New England, mourning less about herself than others have mourned about her, set herself to do the things that she could do best. No water power could be more abundant, no seashores more attractive, and few harbors more inviting than those of New England. Manufacturing, commerce, a considerable range of mineral industries, and the care of resorts among the mountains and by the sea, may not unfairly be said to mark the more assured and final adjustments of life to land in this region whose bread can better be won by exchange than with the plow. Adjustment and control are marked by wider range. But even in her special field of the factory there is a qualification. Abundant as water power is, coal is yet important, and must come by a long haul. And the haul for cotton is yet longer. The South is awakening, and a region which has water, coal, cotton, and labor in juxtaposition is likely to win in the race. Time will impart the needed skill to the southern operative, and New England manufacturing must turn in the main to other lines.

Professor Hinsdale has remarked upon the prodigious importance to the old Northwest of the fact that, on the one hand, it belongs to the upper Mississippi, and on the other is closely associated with the Great Lakes. Thus in a word is summed up much of the history of the prairies. Speaking in detail, we have first what we may call prairie conditions, land that is mainly flat and low-lying, in a forestless state, a fairly moist climate, and, owing in part to its lack of relief, a land fitted to accumulate a soil of surpassing richness. Water power is for the greater part absent, but there is abundant coal. These conditions mean the dominance of agriculture, easy local communications, and the ultimate growth of manufactures. The critical questions of geographic adjustment arise in connection with long-distance transportation. It has been said that the railroads raised up Chicago and determined New Orleans to an inferior position. But this does not tell the

whole story. It is true that railways waxed as traffic down the Mississippi waned, but it is difficult to weigh the share that lake shipping has had in making Chicago. It is also true that railways fall back upon geographic conditions—easy grades along the old lake plains to the eastward, the open Mohawk Valley with its Erie Canal, the tidal Hudson, and New York at the western end of the Atlantic Ferry. But it remains to be seen how the old Northwest will be affected by railways to New Orleans and Galveston, by an extended Drainage Canal, and a ship channel across the Isthmus of Panama. In brief, the East and the South have long been striving for the prairie country, for it stands balanced between the one and the other. The easy grades and shorter haul down the Mississippi, added to American developments all about the Mediterranean of the Western Hemisphere, may compensate for the longer passage from the Gulf ports to Europe, and may weaken the bond between the prairies and New York. The more is this result possible now that for more than a generation slavery has been wiped out, and steady assimilation of social conditions between the upper and lower Mississippi regions can proceed. The old struggle is on which gave Washington and the fathers so much concern in their time, as to whether by roads and waterways they could render nugatory the divisive influence of the Appalachian barrier. The sturdy men that won the old Northwest came in by the Cumberland Gap, and the men that subdued and populated it came by the Seneca turnpike or through Pittsburg, but the ancestral homes of New England cannot be forever remembered, nor will the man of the prairies maintain loyalty to New York when his interests point to the Gulf of Mexico.

We take a further example in the development of the arid lands. The basal motive cannot be counted as other than the wealth of minerals in the western mountains. Once prompted to test the possibilities of the dry plateaus of the Cordilleran country, they have been found to have values of their own, making them no longer merely subsidiary to deposits of gold and silver. The Kansas problem and the unhappy inflation of the decade following 1885 had their origin in ignorance of geographic conditions. A temporary increase of rainfall was thought to betoken a permanent and beneficent change of climate. Hence came an era of speculation and foolish spending, of boom towns and excessive railway building, of reckless borrowing and inability to pay interest, of bankruptcy and foreclosure. With this unhappy harvest of distress came wild-cat theories of money, misunderstanding and bickering between East and West, and great loss and suffering on the

part of lender and borrower, until the bubble collapsed, until overpopulation was checked, and most of those semi-arid lands were returned to grazing. Thus we approach the deeply characteristic development which arid-land life must have. There will be tillage where there is water enough for it, and grazing over wide intermediate spaces. And in the areas of tillage population will be dense, will approach the conditions of the town, and the interests of the people will link them to each other in semi-communistic ways. These conditions of solidarity will work themselves out in the school, the church, in economic relations, and in the very life and quality of the men that make up such a society. And the nation itself, by adopting an irrigation policy, has not only prospectively increased its wealth and its census roll, but fosters thereby a modified and highly specialized type of society.

Final, or at least larger, adjustments are hinted at in our expansion of territory, in binding to ourselves, more or less closely, lands across the seas and in the enlarging commercial bonds which join us to other lands. We can hardly emphasize too much the fact that we stand between two oceans. The Pacific now looms in importance and we are pointed back to our primal geographic-historical fact that we fronted Europe and were thus approached on our more open side by several colonizing peoples, of which one, perhaps in defiance of geographic obstacles, became dominant.

We now come to the question whether these great relations between history and geography are properly recognized in the literature of the two subjects and in the schools. We shall do historical literature no injustice by affirming that it is generally deficient in a real understanding of relations to the earth. The *quality* of regions and of national domains is but partly realized. There are plains, there are mountains, there are rivers; there is impressionistic painting, but little photography upon the pages of the historians. In like degree geography has failed to avail itself of the rich interest which history offers, with its wealth of human elements and its causal associations running through time, and its economic and social relations giving easy unity to wide regions or remote nations.

If we inquire for correlation in schools, the answer is little better than negative. Certainly geography should be fundamental and should in some measure precede, while history should follow, and should not only be more intelligible, but contribute new fascination to the geography. The teacher of geography must know the essentials

of history, and should be well schooled in the history of his own people, and the teacher of history is but half fitted for his task if he does not know the principles of geography, and if he has not a generous knowledge of the geography of his own country.

Such correlations, whether in the teacher himself or in school programs, are rare. And yet correlation is peculiarly possible with the common plan of one teacher for all subjects in a grade and, in the department system, only requires some planning on the part of directors and teachers. But the teacher will often wait long for aid from his superiors. As it was put by another, "It is no uncommon thing for a class to be studying at the same time the geography of Africa, the history of England, the plant life of Minnesota, while having for their reading lesson the story of Peter the Great." But, barring repressive systems of examination, there is no limit except of time and interest to the amount of history that a teacher of geography may know and use, or to the history teacher's use of geography, each, of course, making the other subject subsidiary to his own. In this respect we seem to be far behind Germany, where the two subjects more often are handled by the same teacher. We need not, however, wonder that we are backward when we see geography just escaping from its thrall as a locational study, and when the first association in this country for improving educational methods in history dates from the Nebraska organization of 1889.

Professor Howard criticises the report of the Committee of Seven to the American Historical Association as disappointing in the matter of correlation. He, however, lays stress here on law and economics, while we would place it without question upon geography. In fact, the one passage of the report that touches geography with emphasis, serious and true as it mainly is, is amusing in its assurance. "Fortunately," says the passage, "it is unnecessary in these latter days to call the teacher's attention to the use of maps, and to the idea that geography and history are inextricably interwoven." This would be pleasant if it were true. The use of wall maps, physical maps, and of an historical atlas is recognized, and we are told that "pupils should not lose sight of the physical causes that have acted in history." But what if nine-tenths of the teachers are densely ignorant of these physical causes! The best thing in the passage is quoted from Hinsdale, who says, with freshness and power, "Groupings of historical figures and scenes around geographical centers make these centers themselves, binding the figures and scenes together, give them a new permanence

and solidity." Aside from the one passage there is little reference to geography in the report, and the implication is that locational geography and a rough knowledge of the principal reliefs is all that is needed. Dr. C. A. McMurry, in his "Special Method in Geography," has given pointed expression to the importance and feasibility of such correlation as is here under review.

One of the more satisfactory utterances on this subject is found in the report of the history conference to the Committee of Ten, as follows: "From the beginning the teacher should attempt to connect physical geography with the present political condition of the world; and, in like manner, the study of political geography should constantly bring in the physical features." Even more emphatic is the formal resolution of that conference, "That the study of history should be constantly associated with the study of topography and political geography, and should be supplemented by the study of historical and commercial geography and the drawing of historical maps." Good as this is, we may even read between the lines here the "theater-of-history" idea, rather than the very ground and conditioning element of his ory. Thorpe, in an essay included in the volume on the "Study of History in American Colleges," observes: "That study [history] should be at first chiefly geographical and sociological." He is speaking here of the public school. The College Entrance Examination Board might well go farther in its syllabus of history, than this, "geographical knowledge will be tested by requiring the location of places and movements on an outline map." This might have been written a hundred years ago if history had then counted for admission to college.

What is proposed to be done, in view of the need and of the evident gains of such correlation? We have no scheme to outline, but we hopefully recognize an awakening interest and excellent beginnings. Within a brief time formal works on the interrelations of geography and history have begun to appear. There is a profound interest in this field on the part of all progressive geographers, and a considerable number of pertinent articles have appeared in the geographical journals during the past five years. Several of the later historians have also recognized the intrinsic (if we may so term it) value of geography. To Francis Parkman must be given the honor of being the pioneer in this splendid field. If to him a region is a theater, it is a stage that glorifies with its native colors every deed that emerges upon it, and the reader knows that he has seen no manufactured setting, but the very

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home and fertile soil where historic deeds have matured. Fiske and McMaster are not far behind the great master of lake and forest, and it is worthy of note that for a part of its next annual meeting the Association of History Teachers of the Middle States and Maryland have arranged a session for the discussion of such problems of joint interest.

These indications point to a vital growth which will bring about the needed organization and will develop suitable school programs. We shall, as time advances, have more teachers of geography and of history, specialists in chosen fields, and neither will be deemed fit for his own subject until his interest and his first-hand knowledge take him far over into the other.

EMPHASIS UPON ANTHROPO-GEOGRAPHY IN SCHOOLS*

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EVERY state or nation includes two ideas, the land and its people, each unthinkable without the other. Even the Sahara suggests, besides its wastes of sand, the group of huts in the palm-grown oasis, the white-robed Arab sitting in the shadow of his tent by a solitary well, the camel with his brown-skinned driver bending before the blast of the simoon, and the long-drawn caravan creeping along a bone-marked trail. Geography is the study of the land and its effect upon its people; history is the study of a people in whose economic, social, and political development the land is an essential and potent factor. Geography lays the stress upon the land, history upon the people. But the land is fully comprehended only when studied in the light of its influence upon the inhabitants, and a people can never be understood apart from the field of their activities, from the climate which determines their housing and dressing, the rainfall and soil which control their agriculture, the isolation or accessibility of their country which defines the amount and character of their intercourse with other lands, and finally the size of their territory, which must always be a factor in the numerical strength of the population.

By the introduction of the human element, geography is lifted out of the dull round of formal studies and the earth becomes the

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setting of a great world drama. By the introduction of the geographic element, history becomes vitalized; through it now pulses the life-blood of the people. All the forces and treasures and beauties of nature enter into the chronicle. Its pages seem to smell of the upturned soil; they are golden with fields of ripened grain and white with fields of cotton; they echo the sound of the pioneer's axe blazing a trail over a mountain pass, the ripple of the voyageur's canoe exploring some far northern stream, the splash of the steamboat on a river highway, the roar of waterfall and the whir of mill-wheel, the lowing of cattle on thirsty plain, and the hum of life in the big seaport; they reflect the persistent and potent forces back of political bodies and legislative enactments in the geographic conditions of the people.

The chief emphasis in the two studies should not be changed; but this is still compatible with a fuller, deeper geographical interpretation of history than is now customary, and a more fruitful anthropological interpretation of geography. Though the newer geographical text-books give an interesting and scientific treatment of earth forms, the sections devoted to the various countries of the world are burdened with masses of economic detail, which in themselves are uninteresting to a child, which are imperfectly presented in their causal relation, and which for a large part are only indirectly, not directly and obviously, the effect of geographic conditions. The result is that the child is swamped in a mire of unsystematized knowledge or is forced along a line of causal reasoning too long and involved for the immature mind to follow. Finally, these facts are selected with little view to history, the next study in the school curriculum.

Economic facts appeal little to the child; their study is proper only for the mature mind, and hence their multiplication in geographical text-books is stultifying. Yet the causal idea back of a group of such facts the child will seize upon and retain. For instance, he is not eager to learn or sure to remember that Troy, N. Y., is an important center for the manufacture of collars and cuffs, Cohoes for knit goods and hosiery, Utica for fine hardware and machinery, but he can grasp the principle that all these are manufacturing towns, because their location on the great canal and valley railroad route between the Hudson River and the Great Lakes renders them accessible to raw materials of all kinds and enables them to send their finished goods to widely distributed markets, while local water power reduces the item of fuel in the cost of production. In the same way

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the child can readily understand the geographic factors which have made England lead the world in manufactures and which have localized the great manufacturing area in the northwestern part of that country; but he gains little by memorizing a list of the chief industries distinguishing the various English cities. The teaching of geography would gain, therefore, both in interest and educative value, by paying less attention to the mere enumeration of details and more to their scientific interpretation.

This multiplication of economic facts, which has so expanded the text in recent geographies, has crowded to the wall the important study of the map. Earth forms are slighted in their geographical distribution and their effects as phases of geographical environment. The old routine, illogical map questions have not been succeeded by intelligent, logical map questions designed to develop anthropo-geographical principles. The drainage systems of Russia, Germany, China, or America are described in the text, perhaps; but the child is not sent to the map by discreet questions to discover those drainage systems for himself and to estimate their importance for their respective countries. And every child should become an infant discoverer on the cartographical page in order to acquire a self-constructed knowledge of every ocean, continent, and country as the basis for anthropo-geographical deductions. Maps, physical and political, must remain the child's chief repository of facts, to which he can most easily refer and from which he can draw his surest conclusions. Trained to this anthropological interpretation, he finds the otherwise dull page becoming luminous. The facts and principles thus acquired introduce him to contemporary history, the terms and names of which are more or less familiar to him, and by comparative methods into past history. Moreover they deal with themes far more likely to interest him than the weary enumeration of economic data. A list of Cuba's mineral resources or a statement of its commercial exchanges with other countries appeals little to a child, and is not readily associated with the Cuba which he knows best, the Cuba of the map; but if you would arouse his interest, point out the isolation due to Cuba's island character, show him that to this separation from the mainland and to the island's limited size was due in large part its long subjection to Spain, when all the other Spanish colonies in Mexico, Central and South America had gained their independence, either because the vast extent of their territories and their consequent larger populations rendered

their uprising more formidable, or, as in South America, continental neighbors like Colombia and Venezuela, Argentine and Chile, sent armies even over the high barrier of the Andes to support each other in the struggle for freedom, while Cuba's seagirt location, accessible only to ships which the new-born Latin republics lacked, kept at arm's length the deliverer, and Cuba's relatively small area could be retained under the crushing hand of Spain. Finally, Cuba's proximity to the United States and her strategic position on Florida Straits become obvious factors in her independence and the guarantee of that independence by the American Government.

In the same way, lead the young student to read from the map the restricted availability of Russia's coastline—its White Sea harbors accessible from the open ocean, but closed by ice more than six months of the year; its Baltic coast, also hampered by a long winter, liable in time of war to be bottled up by Germany, Scandinavia, or the ships of England patrolling the narrow exit; its Black Sea coast, to which the neck of the bottle is particularly small and the cork secured for all naval vessels of the great Muscovite power; its far-northern strip on the Pacific with the often ice-bound port of Vladivostock, where, moreover, the long cordon of the Japanese Islands makes the Japan Sea another Euxine and the Korean Strait another Bosphorus; the significance of the struggle for a maritime outlet on an unfrozen sea in Manchuria; and finally the meaning of the ominous bulge of Russia's frontier south of the Caucasus and the wedge driven into northern Afghanistan, signposts of her proposed advance to the Persian Gulf and the Arabian Sea. Ask the child to estimate from the map the value of the coasts of all the European countries, in terms of length, harbor facilities, availability, and routes of communication with the interior. See how eagerly, from an inspection of the coasts of Germany, France, Russia, and the United States, as interrupted by the intervening littoral of a foreign power, he will reason to the political necessity of a canal to connect the separated coasts, and from a study of a physical map will fix its possible location. Tell the child that the Samoyedes, a retarded people of Arctic Siberia, have twenty-one different words for the color gray, and ask for the geographical reason of this surprising richness in a primitive language.

The map, thus treated, becomes for the young student a great field for comparison, and hence for the deduction of anthropo-geographical principles. Tracing the strategic and hence political

importance of the entrances to enclosed sea basins, he reads at a glance the significance of Havana and Key West for the command of the Gulf of Mexico, of Constantinople for the Black Sea, of the Russian fortress at Port Arthur for Pechili Gulf, of the British positions at Singapore, Aden, Suez, and Gibraltar; he groups with these strategic points Denmark's peninsula and island location commanding the channels leading into the Baltic, and readily grasps the fact that this location made the historic greatness of the country in the past, enabling it at one time to levy toll on merchant vessels entering this northern Mediterranean, and has prevented its absorption by one of its larger neighbors, because all these could agree upon the desirability of having this important passway in the hands of a weak and neutral power.

To recapitulate, this interpretation of the map has the following advantages: Its method is comparative and hence scientific; it arrives at anthropo-geographical principles interesting and comprehensible to an immature mind; it deals with familiar, present-day history and leads from the present to the past; finally it is a natural preparation for the study of history, which immediately follows geography in the school curriculum. The American child goes from the study of geography to the history of the United States. He possesses a valuable stock of facts about the climate, location, size, coastline, and topography of his country, ready to serve as the basis for his study of its history, but rarely or inadequately utilized for this purpose by school text-books. The opportunity to apply the pedagogical principle of proceeding from the known to the unknown stares one in the face; but the valuable ready-made foundation is ignored, the child begins immediately on the superstructure, and his history hovers in the air.

The geographical element in history as taught to-day in the schools —taught often, too, in compliance with the requirement of college preparation — is for the most part superficial and inadequate. It consists chiefly in memorizing geographical locations, in very imperfect map-drawing, yielding to the student scant profit in proportion to the expenditure of time and effort, or in filling in outline maps, guiltless of any suggestion of topography, with political boundaries and sites of towns and battles. The study is not in the least interpretative; it makes a demand upon the memory, not upon the reasoning power. The teacher asks the student to locate the battles of Oriskany, Ticonderoga, and Saratoga in the Revolution, and is

satisfied with the answer that they were in the central part of eastern New York, overlooking the important fact of their location along the two great valley routes between flanking mountain barriers from Lake Ontario on the west and the St. Lawrence on the north, converging upon the upper Hudson, that great river highway through the heart of the Colonies. In the War of 1812 the land battles of Saranac River and the naval engagement off-shore are located by the student near the northern end of Lake Champlain, but are not shown to be a repetition of the battles of Ticonderoga and Valcour Island in the previous war, pushed a little farther north on this same great Champlain-Hudson route. Or the numerous naval conflicts in this same war are located vaguely in the wide waste of the Atlantic, with no regard to the great trade routes determined by prevailing winds and ocean currents, which were followed in that day by English merchantmen seeking the West or East Indies, and which therefore were infested by American vessels preying upon English commerce. I remember distinctly, when a child of ten years old, studying the dreary list of naval engagements in this war, with the names of vessels and commanders on either side, and wondering in my childish mind where all these battles were, and why they were anywhere. If I learned that the conflict between the "Constitution" and the "Guerrière" took place southeast of Sable Isle in such longitude and latitude, I was not much wiser, because the significant fact in this location was carefully suppressed — namely, that this battle was fought near the southern entrance to the Gulf of St. Lawrence, where American vessels throughout the war were lurking about to intercept English supply ships on their way either to the St. Lawrence River and the British forces in Canada or to the British naval base at Halifax.

The geographic factors in the history of Greece receive more attention in school text-books than those of any other country; but here only the more obvious influences are discussed, the political subdivision of the country due to physical subdivision by mountain barriers and arms of the sea; the indented coastline, the fringing island groups, and the proximity of other lands resulting in the seafaring and colonizing propensities of the early Greeks; the effect of climate, quality of atmosphere, and scenery upon the artistic development of the Greek mind. But other equally important influences are past unnoticed. The marked colonizing tendency of the people was a result also of the restricted territory of the little peninsula and the limited amount of arable soil in a country of rugged mountains

and sterile plateaus. In a country where to-day only eighteen per cent of the surface is under cultivation, population must at an early date have begun to press upon the limits of subsistence yielded by primitive agriculture. Emigration from congested districts necessarily followed, and foreign commerce was resorted to to increase the earning power of the states. In all these points ancient Greece presents a geographic and hence economic parallel with the history of Phœnicia, Norway, England, and—barring the quality of the soil —with Holland.

But, as Ratzel says, "The most important fact in the geography of Greece was its location at the threshold of the Orient," and yet this factor is never brought out in its full significance. Greece was the part of Europe most accessible to the ancient centers of civilization in Egypt and southern Asia; upon it converged all the great routes from the East, which poured into the Hellenic world the intellectual and commercial wealth of the Orient. The Mediterranean and Black Sea termini of every such route were marked by Greek colonies—Trebizond, Sinope, Byzantium, Smyrna, Miletus, Antioch, and Naucratis in the Nile delta. Over the eastern rim of the Ægean rose the sun of Greek culture, flooding with light the islands of that sea, the Asia-fronting shore of the peninsula, and the eastern slopes of the Pindus Mountains, while a gray, uncertain dawn long defined the westward-reaching shadow of the massive range. Then, by its position midway between the productive countries of the East and the newly opened lands of the western Mediterranean, Greece became the great middleman of the early world, the distributing center of products and ideas, just as twenty centuries later the Hanse towns of the North Sea and the neighboring Baltic became the agents of Mediterranean commerce and culture for the less developed coast regions of northern Europe.

When the maturer student has acquired a knowledge of general history and passes to the advanced study of physiography, as now taught in some high schools and colleges, he commands the material for broader anthropo-geographical conclusions, which in turn give him a larger outlook upon history. The study of the physical features of fiord coasts and countries will gain immensely in interest if followed by a comparison of the influence of fiord environment upon the Indians of southern Alaska, the people of Iceland, Greenland, and Norway, as also upon the economic development of British Columbia, Washington, and Maine. A study of continental islands is complete only

with a comparison of the isolating influence of an island environment in Japan, England, Iceland, Corsica, Madagascar, Cape Breton, and Cuba, and with an analysis of the striking and not fortuitous parallels in the history of England and Japan. The study of enclosed sea basins requires a comparison of early maritime development in the Mediterranean and the Baltic; the study of mountains, a comparison of their isolating effects in the survival of moribund languages in the Alps, Pyrenees, Caucasus, the Highlands of Scotland, the mountain districts of Wales and Ireland, and in the persistence of a seventeenth century English in the remoter parts of the Southern Appalachians to-day. All mountain peoples are found to have certain characteristics in common, especially a love of political and personal freedom, which explains the existence of small, independent mountain states like Switzerland, Andorra, Montenegro, Nepal, and Bhutan; the fierce and protracted resistance to conquest made by the ancient Samnite tribes of the Apennines, the Highland clans of Scotland, the tribes of the Caucasus and Himálayas, and the Albanian mountaineers of Turkey; and it accounts for the habitual disregard of governmental authority displayed to-day by the people of the isolated Southern Appalachians in matters of clan feuds and illicit distilling.

By comparison of different periods also, the same geographic factor is seen to operate continuously, though under new aspects, caused by a change of other conditions. For instance, certain mountain passes and the river valleys leading from them down either slope have determined the routes across the Appalachians, whether of "buffalo trace," or Indian war-path, or the well-beaten trail of the pioneer, or the wagon road of the early western emigrant, or the line of the railway seeking the easiest path across the wide-stretched barrier. In the same way that deep furrow between the mighty Caucasus and Anti-Caucasus Mountains which served as the ancient route of communication between the Black Sea and the Caspian, and brought the gold of the East to mythical Colchis, sees to-day the railroad which brings the petroleum of Baku and the rugs of Bokhara to the Mediterranean lands. The geographic conditions which made a maritime power of ancient Greece still enable the modern country to lead in the carrying trade of the eastern Mediterranean. The arid plains and mountain slopes of the American West, once the grazing lands of the buffalo and deer whose skins figured prominently in the early exchanges of the busy little towns at the

elbow and the mouth of the Missouri River, to-day raise the cattle and sheep to supply the great slaughtering and packing industries at St. Louis and Kansas City.

These geographic forces are stable, persistent; they operate from day to day and from century to century. They constitute the soil in which empires are rooted, and they rise in the sap of the nation.

PRACTICAL WORK IN SCHOOL GEOGRAPHY*

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NO line of development in modern education has been more remarkable than the growth of science teaching by the laboratory method. "Study things themselves; learn by first-hand experience," is a universally accepted principle. The general principle is established and the working out of the details is progressing rapidly. A decade of experimentation by practical teachers has yielded well-organized plans of work in chemistry, physics, and biology. Laboratory courses in these sciences have been outlined and are practiced with pretty general satisfaction. But what about geography? Certain it is that in this field matters are in an unsettled state, at least in America. There are people who question whether geography is really a science at all. There is lack of agreement as to what should be included under the term and what excluded. Any one who has attempted to define the scope of geography has found how elusive and elastic are its boundaries, and how numerous its ramifications into all other fields of knowledge.

Physical geography is accorded a place among the sciences, but it does not so readily lend itself to the laboratory treatment in schools as do chemistry or biology or even physics. In the very nature of the science, laboratory practice cannot form so large a part in the study of physical geography as it does in the other sciences named. In the broader field of general geography, this is even more largely true.

Glance down the table of contents of a school text-book. It is evident that geography treats of an almost endless list of places, activities, phenomena, and relations, scattered over the entire earth, and that most of these cannot be studied at first hand unless we travel over the entire earth. Deserts, mountains, oceans, glaciers, and a thousand

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more of the real things with which geography deals cannot be brought together for study in one place. Manifestly a very large part of a student's geographical knowledge must be gained at second hand unless he is able to travel extensively. Principles, processes, and type forms may usually be found illustrated near home. Particularly is this true of the physical side of the study, and also of the commercial. The meteorological phase of the subject is, of course, well suited to first-hand study in almost any school. Every locality furnishes opportunities for some outdoor studies and these opportunities should be used to the utmost. Such studies are the lifeblood of school geography.

Regarding indoor laboratory work in physical geography, one scarcely knows what to say. Very few schools indeed have achieved any notable success along this line. The laboratory manuals thus far produced are confessedly unsatisfactory, and each one differs radically from every other.

In the geography of the elementary school, systematic laboratory work is as yet unknown, but observation and experience are impressing upon us that there are forms of practical work which enrich our geography teaching and enhance its value. It is with these elementary exercises that this paper chiefly deals. For convenience we may classify the exercises as follows:

1. Manual exercises, including—
   - (*a*) Modeling in sand, clay, or pulp.
   - (*b*) Map making and ordinary map drawing.
   - (*c*) Making of special maps such as, for example, those showing productions, rainfall, or industries, including the filling in of printed outline maps.
   - (*d*) Graphic representation of important statistical facts, such as relative areas of countries, population of cities, exports, etc.
2. Observational exercises, including—
   - (*a*) Study of pictures; the use of the stereoscope and stereopticon.
   - (*b*) Study of relief models and contoured maps.
   - (*c*) Study of raw materials and their finished products.
   - (*d*) Indoor study of common rocks, soils, ores, etc.
   - (*e*) Visits to mills, quarries, markets, etc.
   - (*f*) Weather observations and records.
   - (*g*) Field trips chiefly for the study of natural forms and phenomena of a geographic character.

It is not to be hoped that all of the above will be emphasized in any one school. Such a condition would probably be worse than emphasizing none of them.

Sand molding has proved its worth in primary grades. A month ago I secured an expression of opinion from forty or more teachers from some twenty different states as to the value of the sand table. There was hearty agreement that its use is essential to clear teaching in the primary grades. Only a few of the teachers cared for the sand table beyond the fifth grade. Map modeling in pulp or putty by grammar-grade pupils may be worth while as an exercise in manual training, but not as an exercise in geography.

Map drawing, which formed so large a part of the geography work a generation ago, seems to have been largely crowded out of the modern grammar-school curriculum. The group of teachers referred to above were in general agreement that the expenditure of a large amount of time by the pupil on a single map, laboriously executed, is not profitable. But the rapid sketching of maps, done free hand by the pupil, was heartily endorsed by all. The outline maps sold by various publishers were generally approved by the teachers. These give correct outlines of states and countries in which the pupils, usually from memory, place cities, rivers, or mountains; shade areas of ample or scanty rainfall; indicate the industrial, farming, grazing, lumbering, or mining sections, the great trade routes,—in short, any of the larger facts in which *location* is a matter of importance.

The practice of graphic representation in geography is worthy of more attention than most teachers give it. Statistics are to be avoided in geography teaching; yet, to a small extent, they must enter. To teach the exact population of cities or the areas of states is manifestly unwise; yet, to know something of the relative areas of a few of the most important states and countries and the relative population of a few important cities is useful. The graphic representation of a few selected areas of states and countries by proportional squares often opens one's eyes to long-cherished errors which he gained by studying maps constructed upon different scales. How many Rhode Island boys realize that, if their own state be represented by a small square, more than 200 like squares are necessary to represent the area of Texas? It may be disappointing but it is also educative when a pupil who lives on the banks of the Hudson or Delaware draws a line of any convenient length to represent the length of his river, and then draws another in proportion to represent the

Mississippi-Missouri, and finds that it takes fourteen of the former placed end to end to equal the latter. A graphic representation would reveal to the pupils of New Jersey that if sixteen mountains as high as the highest in their state were placed on top of one another, the pile would scarcely equal Mount Everest in altitude. The value of graphic representation lies in the vividness of the impressions which are left on the mind by making these diagrams, and it should not be forgotten that the vividness of impressions diminishes as their number increases.

The second group of practical exercises may be termed observational. Most of them are studies of real things. Picture study is an imperfect substitute, but the substitution is often unavoidable. We cannot see the Alps or the Alhambra in America. I judge that enough pictures are used in teaching geography—perhaps too many. If the pupil is shown a great number of pictures rapidly, no clear mental pictures are retained.

My suggestion is:

First, a careful selection of a relatively small number of clear pictures which present truly *typical* scenes at home and abroad. Second, that these pictures be used for actual study, each picture being accompanied by a few written questions which shall direct the pupil's attention to the salient things in the picture.

Regarding the study of relief models and contoured maps little need be said. Teachers find them so generally lacking in the human and life elements that they do not appeal to younger children. Secondary and collegiate students may use them to marked advantage.

The study of raw materials of manufacture and their products in various stages of completion, and also the study of common rocks, ores, soils, etc., may or may not be highly profitable. It is a noticeable fact that when these objects are taken from the school collection and studied, interest soon lags. On the other hand, it is equally noticeable that if the specimens were collected by these pupils themselves, they are a genuine center of interest. They study them and talk about them eagerly. They may yawn over a lesson on specimens brought from the school museum, but be on the *qui vive* of interest over like specimens which they themselves have collected on a trip. In observational studies, interest is absolutely essential to good results; only the interested observer really sees what he looks at.

The last and most important phase of practical work in school geography is found in the visits to mills, quarries, markets, river

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banks, falls, or anywhere else where the pupils may see with their own eyes the actual things and processes about which they are studying in geography. As a trip to Europe differs from the printed description of such a trip, so, in a general way, does field geography differ from book geography. Weather observations, systematically made and recorded, form the reasonable basis for elementary meteorological studies. These studies of things just as we find them is the most valuable kind of education. In large cities and with large classes, field trips are, of course, so difficult to provide for that most teachers do not undertake them. However, we found in the recent session of the Cornell Summer School of Geography that more than half of the teachers present make a practice of taking their classes on field trips or factory visits, and practically all of these teachers were from large cities. I asked a great many of them, "Do you really feel that these trips pay for the time and trouble involved?" and I received in all only one negative answer. But the fuller discussion of field work in geography is assigned to another, and I must not encroach.

I have used or seen used in the class room every exercise recommended above. I have faith in them. They are, however, means to an end and not an end in themselves. Their value in practical use will depend upon the clearness with which the teacher sees the end which she is really aiming at in using them; the definiteness of her purpose and plan; and her good sense in deciding what to use and what not to use.

SUMMARY

1. Scientific teaching calls for the first-hand study of things wherever possible—the laboratory method.

2. Physical geography lends itself to laboratory treatment, but not to the same extent as do some of the other sciences.

3. In general geography most of the facts must be gained by studying about things rather than by studying the things themselves.

4. The value of geographical study is increased by the use of available field and laboratory exercises. These are both manual and observational.

5. Map sketching and outline-map exercises by pupils are a valuable means of expressing and impressing geographical ideas and a convenient means by which the teacher may test the accuracy of the pupil's knowledge.

6. Graphic representation through diagrams aids in correcting faulty notions and in getting correct ideas where statistics are involved.

7. The systematic study of pictures is a profitable form of geographical work.

8. Relief models and contoured maps are better adapted to secondary and collegiate students than to elementary students.

9. The study of specimens of any kind is most satisfactory when the pupils collect the specimens which they study.

10. Field trips, whenever possible, are the most valuable form of all practical work in geography.

PHYSICAL GEOGRAPHY IN HIGH SCHOOLS*

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PHYSICAL geography, though in one sense as old as the hills themselves, has been looked upon and is still considered a comparatively new subject. It has a brief past, a period which was not formative and preparatory, but which rather represented a cycle of inactivity preceding renewed activity or revival. Its present we are in the midst of—a period also brief— characterized by activity and accomplishment such as should be characteristic of the youth of any life—characterized also undoubtedly by some of the mistakes which necessarily accompany experiment. Toward its future we are now looking forward, to be characterized, we hope, by increased activity and accomplishment, by steadiness and stability also. It is my purpose in the following paper to give very briefly an account of the past, the present, and of what we hope for in the future of physical geography in the high schools of our country. Twenty years ago physical geography was a subject which appeared in the curriculum of public and private schools as one to be pursued for a term of from sixteen to twenty weeks if so elected by the pupils themselves. These pupils had passed through the preliminary steps of political geography in the grammar schools, where the emphasis had probably been laid upon arbitrary memory efforts in the study of political and natural features, and now found themselves confronted with new and more difficult problems in their high-school geography.

To the standard text-book of that time (Guyot's) the modern physical geography owes much, and to it also, I believe, many of the more mature students and teachers of physical geography trace their first

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interest in the subject and their first inspiration along such lines. Concise, interesting, vivid, giving cause and effect their due share in the treatment of the successive problems of physical geography, those of us who studied or taught it still find its very language coming often to our lips, making a ready tool for rapid work. Other books most frequently used two decades ago were Warren's and Maury's. These books were all similar in style—in outer form the type geography of our childhood; within, the subject-matter was arranged in double columns of alternating coarse and fine print, with no attempt at illustration. They were much less attractive to the eye than our newer books. The problems which, when strictly classified, we designate as meteorological were less empirical than those of physical geography proper. Here, however, explanation was not omitted—on the contrary, much more difficult explanations were given than are now attempted. It was not upon the text-books, then, that the burden of responsibility for the unsatisfactory condition of the subject in schools rested. This was divided between the school authorities, who gave the subject no consideration, and the teacher, who, chosen for convenience sake, was often wholly unfitted for the work.

As a result of this low standing of the subject, and the low standards set for the teacher, the presentation naturally lacked much that we now consider essential. The method was purely a text-book method. Each topic was presented as a complete unit—a chapter to be opened, committed, and finished with little reference to the preceding or to the future topics; cause and consequence were but little dwelt upon, and the laboratory method was practically unheard of. Notwithstanding the adverse conditions under which it labored, physical geography was considered an interesting study from the very character of the subject-matter. The whole thing lacked vitality—lacked reality. It was presented as a series of spectacles, the most sensational being most emphasized and longest remembered. Too much emphasis was laid upon externals—too little upon structure, process, and gradual change, the idea of the impermanence of the everlasting hills was scarcely grasped, and the classification of land forms according to their phase of development was not attempted. Systematic botany and zoölogy were at their zenith, but classification in geography was almost purely arbitrary and based upon externals. Only great teachers recognized any other. Outdoor observations were purely accidental or incidental at the best, and there was only the most casual connection between the actual outdoors and the mountains and hills, the rivers and valleys

of the book. Definitions were much insisted upon, and partook of the general empirical character of the teaching; they were most arbitrary and quite satisfactory if one could accept them.

The aim of the teaching of physical geography was a somewhat shifting one, in keeping with its transitory position in the course. It could hardly have been called a culture subject, nor was it as disciplinary as some of the other sciences of the schools. It was too often a stop-gap or a makeshift, and its results tallied closely with the skill and effort put into the work of preparation and teaching.

During the last fifteen years, or perhaps, more accurately speaking, during the last ten years, physical geography has made great progress. First, in popularity—it is now taught in nearly all good city schools, and appears on the curriculum in many of the smaller schools of New England and New York, while the Central West is undoubtedly more progressive in this respect than is the East. Its popularity among pupils has increased also with its wider field and with the improved methods and facilities for teaching. Its appeal to pupils, whether of mature or immature minds, is unquestioned.

Its position in the school course is a varying one, but it is a much more secure one than formerly. Ordinarily it is offered as an elective, in some schools to the first-year pupils, in others to those of the second year, while in others it is taught as a more advanced subject to the juniors and seniors, or again it may be given early in the course and then reviewed and enlarged upon later in preparation for college. There is something to be said in favor of each of these methods, even from a disinterested standpoint, and in view of the needs and requirements of each individual school there is much to be said as a reason for putting it either in the first, second, or third years. In a year's study of physical geography, whether it be early or late in the course, we find it practicable to study type land-forms, to describe them, follow their history, classify them, learn something of their human value, and finally to apply the type to other lands. We study briefly the ocean with its main features and motions, and lastly the atmosphere and its phenomena. This study is, of course, all elementary, and yet the results attained compare very favorably with those in more advanced classes—they are encouraging and very real. It enables the pupils to interpret what they have already seen; it opens their eyes and their minds to much that they have never seen; it arouses a questioning attitude and a new alertness; it makes travel doubly interesting and it is not easily forgotten. I have put elementary

meteorology last in order as I do in teaching, but it is by no means last in importance or interest, and should be included in every course in physical geography, no matter how elementary.

Within the last ten years, also, new text-books have been published which mark a new epoch in the teaching of physical geography. Put forth by men of acknowledged attainments and leadership, the best ones among them bear the hall mark of authority. Attractive in form, scientific and accurate, and increasingly practical, our present-day text-book in physical geography marks the most rapid advance in value and the quality of teachableness. The very nomenclature of the modern text-book is in itself an indication of the difference between the new and the old in physical geography. Doctor Crothers has said in a recent essay that a noun is known by the adjectives it keeps, and this is quite as true in physical geography as in literature. A young river or a drowned river, a young or a subdued mountain, at once conveys a picture to the present-day student of physical geography. But a few years ago such nouns did not keep company with such adjectives, and the terms would have been quite unintelligible even to students of the subject. Cuesta and Peneplain are new nouns which convey their own meaning without associating adjectives. Progress has been made also in supplementary material to which pupils may be sent as to original sources. This is in the form of monographs on geographical subjects and state and town geographies or geologies, all of them too few in number, considering their excellence.

Under the guidance of some of the more recent of our best text-books physical geography *must* be taught as a laboratory subject, and is at once taken out of the realm of the abstract and the empirical. Laboratory work and laboratory equipment have made less rapid advance than text-books, and along this line there is the most inviting field for progressive work. Field work as a branch of laboratory work also offers most promising opportunities for the activity of original minds.

In the presentation of a subject which has the status of physical geography in the high schools of to-day the teacher is a most important element; this is undoubtedly true always, but less strikingly so in subjects where lines of work are already very definitely laid out. The work of physical geography demands a teacher technically trained, progressive, judicious in experiment, enthusiastic, and open-minded. With the emphasis now laid upon professional training, the increasing demand for technical preparation, and the increased opportunities for preparation along special lines, the number of teachers especially

prepared for this subject is increasing, and with this improvement in the teaching force the quality of work done has also improved. In the more advanced schools, a college course, years of special study on the subject, or summer study at home or abroad, now fit the teacher of physical geography.

Both the impulse toward better work on the part of the teacher and the opportunities for doing better work have come from above rather than below. Because to our leading colleges, and oftentimes to single individuals in those colleges, do we owe both inspiration and opportunity. Harvard, Cornell, Chicago, and Columbia, and an increasing number of other colleges, now give courses in geography which are most valuable to teachers and advanced students, while the summer schools offer opportunities for brief but intensive work to the larger number who cannot avail themselves of the full college courses. To college professors also we owe our text-books, and, in large measure, our present tendency toward laboratory work.

If in all or most of our high schools these things were true; that there was laboratory equipment for physical geography; that it occupied an acknowledged place in the school course; that abundant time was given to it; that the text-book was scientific and satisfactory, and the whole subject in the hands of a competent teacher, then we might say that physical geography had indeed made great strides. These things *are* true in many schools, and increasingly true each year, but the fact remains that there are also many schools — some of them among the largest and best equipped—where methods of teaching prevail which are more representative of the past than of the present—a condition of things which is the result of the plan of school administration. In such schools insufficient time is given to the subject; it is frequently introduced in the school course to serve a temporary exigency; no trained teacher is provided, and in some cases no text-book. This, however, is not a permanent condition—it simply means that the whole subject is in a transitional stage. A lecture course in a high school or a brief course based wholly on the book is merely a beginning, which must soon of necessity lead to better things. The conditions now are very hopeful, and I feel almost inclined to say that those who shape the work in physical geography at the present day hold the schools in the hollow of their hands. College preparatory high schools, where the traditions are most strongly classical, have introduced and are introducing physical geography as a subject opening a comparatively new and hopeful field. Schools which offer a

general course for the sake of numbers of pupils, who finish their school career with the high school, have introduced it or are ready to do so, as a practical subject suited to the needs of many pupils. Schools which attempt to do both these things must of necessity make it a part of their work and the manual training schools also. There is a very wholesome attitude of mind among people in general toward outdoor subjects, an attitude, too, which demands a certain vitality in our treatment of outdoor things, a breadth, and strength, and largeness such as can well be used when one studies the big things of nature.

The course of the high school itself is in a somewhat unsettled stage; old traditions are giving way and much that is new is being added. The work in the New Geography, so called, has been notable for its individuality, if I may so term it; one man in a college here and there has sent out teachers who, acting in the inspiration thus received, have carried the work to widely separated schools. This work has been individual not only in the sense of large dependence upon one personality, but both methods and results have been stamped with individuality.

This period has had the advantage of independence and opportunity and so it will continue to have. Until very recently no effort has been made to unify the subject work in any way. Valuable suggestions leading to greater uniformity of treatment have been made by the Committee of Ten. The outlines prepared by the National Educational Association and by the College Examination Board have also been steps toward a certain uniformity, and in New England informal conferences, participated in by teachers of geography and geology, have looked toward the same end. This individualistic phase through which we are passing is about to give way to a period of greater unity. We have been working toward the same ends, but we have pursued diverse means. By experiment, comparison, and elimination we have established certain principles of work, even in the laboratory and field work where the greatest divergence has existed. From our various experiences I think we may safely be said to agree on a few simple fundamental principles. Among others, that the subject should be largely a laboratory subject; that the laboratory work should consist partly of outdoor work, the character of the latter to be largely controlled by the natural features of the locality; that the time given to it should equal if not exceed that given to text-book work; that it should follow the order of subjects as given in recitations and should precede the recitation if possible. Our work should proceed from the general

to the specific, aiming to cultivate power of inference, independence in thought, practical observation, and the ability to visualize from type forms. It should acquaint the pupil by means of description, map, or model with a large number of type forms, which he will at the end be able to classify and extend to a wider application. Both text-book work and the laboratory work should be most definitely laid out in order to obtain the best results when dealing with the immature minds of our high-school children.

Some believe that *the* text-book of physical geography is still to be written, and as this is undoubtedly true of all subjects in the school curriculum, it must needs be true in so new a field as the new geography. The great need of the immediate future is a laboratory book which shall follow quite definitely the order of work in our best text-books. Such a book would be of the greatest help in systematizing the subject and also in giving courage to teachers who have not had special training, and who dread to initiate work with which they are themselves unfamiliar. A beginning has been made and the need will soon be met by a satisfactory book of suggestion and outline. I hope the time will never come when forty exercises in physical geography shall be laid down as a necessity for the secondary schools sending pupils to college, for from the very nature of our laboratory work and material no arbitrary outlines can be followed in detail. Outdoor observations on the Atlantic coastal plain must of necessity differ from corresponding work in the old land of New England or the delta of the Mississippi. Among our immediate needs, also, I would place additional monographs on geographical subjects, and an increasing number of state and town geographies, all of them up to the standard of those at present published.

The position of physical geography in the school curriculum must be a surer one, though not necessarily an unchangeable one, that can only be dictated by the needs of the individual school. More time also is needed for its proper development. In schools which give the most attention to the subject a year is now allowed for it, and this is well; but if an opportunity could be given to large numbers of the entering class in high schools to study physical geography in an elementary way, and then this could be followed by a half year of advanced study later in the course, it would be better. In the crowded condition of the high-school course I doubt if this would be practicable in many schools. The value of physical geography being proved both as an informational and disciplinary subject, our experts in school

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administration will in the end give it a recognized place. Let the number of schools where geography is taught increase just as rapidly as it can be taught and taught well. It is already popular in large schools; it ought also to extend to country schools. It can be taught without elaborate equipment in such schools where working material is ready at hand and where outdoor observations can be most easily made.

As the years go on and the need both of professional and technical training among teachers is made more manifest in the schools, this demand will extend with even greater force to the teaching of physical geography, and knowing something of the liberal manner in which the teaching ranks are recuperated each year we need not fear a dearth of teachers with the necessary equipment even in this comparatively new field.

The teacher of the next few years will still have great opportunities for original work and will at the same time have as a foundation for work the practical results of others' experience. He will find a stronger popular sentiment in favor of natural sciences and a greater willingness on the part of school authorities and among the pupils to work experimentally both out of doors and indoors, and the subject will all the time be a progressive one. An opportunity to watch development and to see actual results is a greater opportunity than that of taking a subject at its height and with only the possibility of keeping it up to that point or struggling against its decline. Without desiring that the work in physical geography shall be one of absolute uniformity, it will yet be an improvement in the future to maintain a greater uniformity of general principles, a more vigorous attack and a surer touch in treatment to emphasize the process of growth and change, to recognize the human side more fully, and to build up a system of classification which shall enable the student to grasp the subject more comprehensively and give to him a working standard with which to measure the world wide.

We look back upon a period of disintegration and decay, when old methods proved their futility and gave way before the new. We are in the midst of a period marked by experiment, by rapid growth and accomplishment. We look forward to a period of increased vitality, increased accomplishment, increased certainty.

GEOGRAPHICAL NOTES

State Geography — Cause and Effect — Search Questions.— The following questions were prepared with two aims in view: First, to aid in the intensive study of one's own state; second, to aid the pupil in gaining an appreciation of the "causal sequence" in geography.

The questions are designed for use in the later part of the grammar school course, when the home state is being studied in detail, as is done in many schools. In the New Jersey State Model School this is done in the eighth, or last, year.

1. To what extent did *physical conditions* determine the boundaries of the state? Note Michigan and New Jersey for examples.

2. Did the physiography of the state favor or hinder early exploration and settlement? Note, for example, the contrast between Ohio and West Virginia in this particular.

3. What valleys, passes, gaps, or rivers favored travel in the early days? Note, for example, the Cumberland Gap and the Mohawk Valley.

4. What barriers retarded travel and still do? Note, for example, the mountains of Pennsylvania or the Cumberland Plateau of Tennessee.

5. What *natural* routes of travel has the state? These are generally river valleys or lakes.

6. To what extent have these become trade routes? Are the valleys occupied by railways? By canals?

7. To what extent are the large cities and the manufacturing industries found along these natural highways of travel? For example, nearly all of New York's large cities are along the route of the Erie Canal and New York Central Railroad.

8. Does the state occupy an advantageous position for commerce and manufacturing? For instance, New Jersey's greatest asset is its position between New York and Pennsylvania.

9. In what ways has the state's position proved advantageous for trade and manufacturing? Contrast, for instance, Maine and Vermont with Connecticut and Ohio.

10. To what extent has the industrial development of the state been affected by its mountains? Have the Adirondacks and Catskills of New York, for example, been a help or hindrance to the development of the state? What of the mountains of Pennsylvania, West Virginia, Colorado?

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11. If the state was covered by the great continental glacier, what have been the chief effects of the glaciation, (*a*) as to soil, (*b*) as to drainage, (*c*) as to waterfalls and water power, (*d*) as to clay deposits of commercial value?

12. What are the leading factors in determining the climate of the state? What is the average annual rainfall?

13. Show how the farming industries of the state are influenced by the climate and rainfall. Note, for example, the Chautauqua grape belt of New York, the tobacco area of Connecticut, the wheat belt of Kansas.

14. To what extent are the rivers of the state used for commerce? For water power? In the lumber industry?

15. What are the great natural resources of the state (soil, forests, minerals, water power, fisheries)?

16. Trace the relation between the natural resources and the manufactures of the state. In some states, as North Carolina or Minnesota, there is a close relationship between the productions of the state and its manufactures; in others, as New Jersey, there is only a slight connection.

17. To what extent are the manufactures of the state influenced by the nearness of great markets like New York and Philadelphia? Note, for example, the manufactures of Connecticut and New Jersey.

18. What cities of the state are noted for a particular kind of manufacturing? For example, Paterson, for silk; East Liverpool, Ohio, for pottery; Minneapolis, for flour.

19. Is there a natural reason for the concentration of these industries in these particular cities? What is that reason?

20. What cities in the state are predominantly commercial cities? What ones are predominantly manufacturing cities?

21. What parts of the state are especially engaged in (*a*) fruit-growing, (*b*) dairying, (*c*) gardening, (*d*) lumbering, (*e*) general farming, (*f*) special farming? What are the chief reasons in each case?

22. Has the state valuable mineral deposits, as coal, iron, salt, petroleum, etc? How have these affected the growth of the state in (*a*) population, (*b*) wealth, (*c*) manufacturing, (*d*) railroad mileage?

23. Has the development of the state been rapid, slow, uniform, or intermittent? What are the reasons? What advantages has it for future growth? Why?

24. Are the effects of canals and railroads in developing the state plainly visible? Note, for example, the effect of the Erie Canal in New York.

25. How has the physiography of the state affected canal and railroad building? Contrast, for example, the difficulties to railroad building in the mountain and plateau states with those in the prairie states.

26. What great trunk-line railroads traverse the state? Note the route or routes followed by them and account for the selection of the routes.

27. Are the great cities of the state all on trunk-line railroads? Is there a good reason for this? Explain.

28. If yours is a seacoast state, has the coast been rising or sinking in the past? What effect has this had upon harbors? Contrast the drowned coast of Maine with the rising coast of New Jersey or the Carolinas, for example.

29. How has the presence or absence of good harbors affected the commercial development of the state? Show why trunk-line railroads seek to have termini on good harbors.

30. If the state is bordered by one of the Great Lakes or by the Mississippi River, show how this has influenced the industries of the state.

31. How has the physiography of the state or its position affected its part in the nation's history? For example, the Champlain Valley of New York has been the scene of eleven military campaigns. The valley is a natural highway between Canada and the North Atlantic States.

32. On the whole, what natural causes have been most important in promoting the growth of the state in population, wealth, and industry?

R. H. WHITBECK.

The Geographical Field in Indiana.—The discussion of geographical subjects in text-books is usually so general or so brief that unless the work can be supplemented by much work in the local field for the purpose of illustrating, verifying, and objectifying the points studied the results may be vague and disappointing.

Home geography is particularly valuable to the beginner, whose knowledge may be appropriately developed in literal harmony with the pedagogical maxim, "Proceed by easy steps, from the near to the more remote—from the known to the closely related unknown."

The study of Indiana geography would thus become one of the essential topics of the subject. In the school geographies used in the State the Indiana supplement usually appended should be made the center of most careful and complete study.

In this connection a brief outline of the geographical processes, features, and relations to be observed and studied in the State may profitably be considered by teachers of the subject.

In general the surface features of the State depend upon the position of the rock strata of the region. These were formed of sediment from some land surface carried by streams and currents into a sea which overspread that part of the earth's surface now comprising the greater part of the Mississippi basin. These rock layers are estimated to be from three to five thousand feet thick in Indiana. They slope or dip gently to the southwest. They are composed of shales, sandstones, limestones, and conglomerates. Observation of these rocks may be made in places where streams have cleared away the loose soil from the surface of the underlying rock or where holes have been drilled in search of gas, oil, water, or coal. If a hole could be drilled through the stratified rocks, igneous or metamorphic rocks would be found below. In the southwestern part of the State seams of coal are interstratified with the beds of rock. In the east central part the rocks penetrated by the drill give forth accumulations of gas and oil, probably derived from the fossil remains of animals formerly living in the sea and entombed in the rocks as they were forming.

As soon as the land rose above the surface of the sea in which these rocks were formed, streams took their way across its surface and began to trench their channels into the earth. The agents of weathering began to break up, dissolve, and oxidize the rocks so that a mantle of loose material was gradually formed where not swept away by running water, wind, or by its own weight on steep slopes. By these different processes the surface was gradually changed from a comparatively smooth plain to a country of hills and valleys. The surface was roughest where the rocks were hardest, for there the streams made narrow, steep-sided valleys and left high, steep ridges between. A belt of such hard rock extends from near New Albany in the southern part of the State in a northwest direction through Floyd, Washington, Jackson, and Brown counties, forming a chain of high, rough hills called "knobs." These hills are only the most conspicuous of a very rough region embraced in the counties named and in several others to the west and southwest. This is an excellent region for the study of valleys. The surface has been literally cut to pieces in all directions. Along the valley sides the edges of the rock strata correspond in number, order, and kind, indicating their former continuity. Over the whole State this work of valley making has progressed, but the farther north we

go the smaller the valleys become because there they are much younger, as is the whole surface.

Streams and their valleys are valuable features for observation because of their occurrence in close proximity to all points. They furnish examples of great variety, with their numerous features, such as flood-plains, terraces, sandbars, islands, falls, gorges, etc.

The northern part of the State was formerly much rougher than at present, resembling, probably, the present hilly southern region. This was before a comparatively recent and very important event in the physical history of the State. This was what is called the "glacial period." The climate from some cause not certainly known became colder and a great sheet of ice began to gather in the region of Hudson Bay and creep southward, bringing with it the soil and stones of the region whence it came.

This creeping ice-sheet ground and scraped the rocks in its course and many elevations were lowered, while in many places the valleys were filled with the debris of the glacier called "glacial drift." This drift covers about five-sixths of the State to a depth averaging one hundred feet. A depth of five hundred feet has been found near Kendallville, Noble County. This material in most places is clay with stones of various sizes and many kinds mixed through it. The boulders scattered here and there, over many fields in the glaciated region, are among the most easily and commonly observed signs of glacial action. These stones are generally of igneous origin and must on that account have been brought from beyond the borders of the State, as no igneous rocks are native to Indiana. Many of these boulders are planed and grooved by being dragged along in the bottom of the glacier. Any gravel pit or road cut, and many plowed fields, will furnish a collection of dozens of varieties of rocks, such as granite, gneiss, syenite, lava, quartz, etc. Occasional masses of copper, grains of gold, diamonds, and other precious stones are found in digging wells. It is quite common to find portions of trees at various depths up to fifty or sixty feet. It should be remembered that in the northern two-thirds of the State the people dig cellars, wells, and ditches, plow, dig, and plant in the glacial drift. They make mud pies of it as children, and are buried in it after having lived upon it all their lives.

The surface of the drift region, though monotonously smooth, is diversified here and there by various superficial features. Among these are moraines or ridges of clay or gravel formed along the edge of the ice-sheet at many places as it melted away. These moraines are often

discernible only as gentle, wavelike undulations, but they are generally found in ranges or belts extending across the country for long distances. They are numerous and conspicuous in the northeastern part of the State, where several concentric ridges run roughly parallel with the west shores of Lake Erie. An immense moraine parallels the shore of Lake Michigan at a distance of ten or fifteen miles from it. All hills, mounds, and ridges in the drift region except the sand dunes and ridges in the northwestern part are morainic in character. Care must be taken not to confuse these features with the bluffs found along the streams in all parts of the State.

Many of the morainic ridges are partly composed of sand and gravel, and domes or mounds of this material frequently form the most conspicuous elevations. Some of these heaps of gravel form the highest points in many square miles of area. They are often more or less perfectly stratified, and the pebbles in them are smooth, rounded, of many varieties, and generally of igneous origin. These facts show that the piles are due to running water, probably streams running off the edge of the ice or into holes or cracks in it and filling them with sand and gravel washed from the ice. When the glacier finally melted away the heaps became rounded down by gravity and weathering into their present outlines. Sometimes the sand and gravel have been deposited in extensive sheets, probably as deltas at the edge of the ice. Moraines composed mainly of sand and gravel are called "kames." Examples are abundant and any gravel pit not in a stream valley will repay a visit.

Cotton Cultivation.—The recent shortage in the supply of American cotton has led to an investigation of the possibilities of growing cotton in other parts of the world, so that Great Britain, and other countries as well, may not be dependent upon the United States. A British blue book has been issued recently which is devoted to "Cotton Cultivation in the British Empire and Egypt." In this volume the present condition of cotton production in the areas named is summarized. The report will prove valuable to a large number of persons. Among the most promising of the experimental districts for the growth of cotton the following are named: British Central African Protectorate, Uganda, the West African Colonies and protectorates, the West Indies, and perhaps Fiji, British North Borneo, and Cyprus.

In a paper read before the Manchester Statistical Society on February 10th last, Mr. J. A. Hutton, vice-chairman of the British Cotton Growing Association formed in June, 1903, for the promotion of

cotton fields within the British Empire, made an encouraging report upon the results and the prospects of cotton cultivation in Nyassaland. The climatic conditions are there favorable, the wet season from November to April favoring germination and growth, and the dry season securing good conditions in the picking.—*Scot. Geog. Mag.*, July, 1904. R. DEC. W.

The Winter of 1903–04 in the Great Lakes Region.—The winter of 1903–04 was the coldest that has been experienced in the Lake Region since the beginning of the Weather Bureau observations in 1871. It was characterized by severe and continuously cold weather, devoid of thaws on the one hand and of periods of exceedingly low temperatures on the other. Individual months with lower monthly mean temperatures are on record, and lower minimum temperatures have also been registered, except in western New York. The precipitation was almost wholly in the form of snow, the snowfall being above normal in all districts; the greatest excess, 48 inches, was in the Huron Basin. The ice on the lakes was larger in amount than usual; the ice fields were more extensive and disappeared later than during recent years. In Lake Superior the lighthouse supply steamer "Amaranth" was fast in the ice off Whitefish Point as late as May 22, 1904. Although certain newspapers reported that the lake was frozen over solid during the winter, such was not the case. In Lake Michigan the Ann Arbor car ferries were caught in an ice field and imprisoned for nearly two months off Two River Point, Wis., and there was considerable difficulty in operating steamers between Chicago and Milwaukee and between Milwaukee and Grand Haven. In Lake Erie a car ferry was imprisoned in the ice off Conneaut from January 2d until March 11th, when it was destroyed by fire. The *Meteorological Chart of the Great Lakes*, No. 1, 1904, from which these facts are taken, contains some excellent illustrations of the ice in the lakes. R. DEC. W.

Bermuda.—*Area and Population.*—The area of the colony of Bermuda is about eighteen square miles, of which about 3,000 acres are under cultivation. Its length is twenty-six miles; its width (in the widest part), three and one-half miles; its shape, that of a fishhook. There are two ports, St. George, at the eastern end of the land, and Hamilton, in the center, inside the great sound.

The permanent population is about 17,500; to this may be added the strength of the garrison, laborers on public works, the naval and

dockyard contingent, and officials and their families, estimated at, say, 5,000.

The North Atlantic squadron (British), which remains in these waters but a part of the year, may have on board from 1,500 to double that number, depending on the fleet of ships that may come into the ports.

The tourist element is to be counted on as adding, according to the records in the steamer company's offices, some 2,500 more that visit these islands in a twelvemonth.

Imports.—The local dealer therefore has as a basis on which to make his estimates for the season's business a local and transient population of about 27,000 people.

For these reasons the imports of Bermuda are comparatively very large, those for the calendar year 1902 amounting to $2,658,418, of which the imports from the United States amounted to $1,583,714; from the United Kingdom, $746,906; and from Canada, $246,511.

The nearness of New York insures prompt delivery of goods and enables dealers to visit frequently the northern markets.

Commercial travelers know the trade and are prompt in availing themselves of opportunities for placing orders.

The Dominion of Canada also comes in for a share of this trade, via the Halifax and St. John lines of steamers.

The United Kingdom and the continent of Europe supply principally the finer woolen and silk and fancy dress goods.

Products and Exports.—Bermuda holds a unique place in the western world. It is a little country, with absolutely no manufactures or railways, with agriculture alone as its industry (the annual export of potatoes, onions, bulbs, and vegetables being about $500,000), with no business but that of selling goods at retail and in a limited way the warehousing of wines and spirits; nevertheless Bermuda is of importance in the Western Hemisphere.

Bermudan Defenses.—It is the western outpost of the British Empire, considered impregnable, well defended by fortifications, but more completely by its chain of reefs that can only be passed through in daylight, needing then a skilled pilot to guide all vessels into port.

On the land the imperial government is carrying on large and important works. At the naval station and dockyard the appropriation of £500,000 ($2,433,250) was made, to be expended in five years. Other large appropriations have been made, and for very

heavy amounts, for fortifications, barracks, officers' quarters, and other public works, all of which work is now started and some is well under way. The weekly pay rolls for this work is largely spent in the towns and means business activity and prosperity to all classes of the population.

Bermuda as a Health Resort.—Bermuda is also a favorite winter resort for a large number of strangers who come hither to escape the rigor of a northern climate, and who spend their money freely in every conceivable way. Of late years a crowd of visitors come in the summer months, eager to enjoy all the delights that Bermuda offers so bountifully. All this brings trade to the stores, life and activity everywhere—to hotels, boarding and lodging houses, and to the farmer and the artisan, and added to the great outlay of money made by the national government may explain why it is that Bermuda can afford to import so heavily, pay its bills, and continue to prosper.

Eggs and Poultry.—The imports of eggs and poultry seem to be inexplicable, considering the ease with which poultry can be raised here. In 1902 there was imported in eggs alone some $8,000 worth, and poultry in proportion, and this was done even with a duty on eggs, recently imposed, of 6 cents per dozen. The price of this commodity never goes below 30 cents per dozen and that for a short time only, soon rising to 50 or 60 cents per dozen. It would seem that here is an opportunity for some skilled and enterprising man to establish a paying business.—*Consular Reports*, March, 1904.

Poultry and Eggs.—Few people have any adequate idea of the extent of this vast industry, because it is generally considered on a small scale as a mere side issue to something else. Viewed in the aggregate the totals are so vast as to require comparison with other great industries to aid the struggling comprehension to grasp the situation.

The latest available statistics show that last year the poultry and eggs produced in the United States were worth more than all the gold and silver mined in the world during the same year. Except for the year 1900, the egg product alone of this country has exceeded in value that of its combined gold and silver output for every year since 1850, which takes in the entire bonanza period of our history. That, with the poultry product, also exceeds in value the wheat crop of twenty-eight of the most fruitful states and territories.

Consider the discussion raised by politicians over threatened ruin to beet sugar and wool. How earnestly they appealed for higher tariffs and made protests against reciprocity propositions! Yet in 1902 our whole sugar production amounted to only about $20,000,000, while the wool industry is only about a third as important as the egg and poultry industry. In Missouri alone, the fourth poultry state in the Union, recent statistics show that the poultry products in a single year exceeded all the other products of that state combined by about $17,000.

Prof. George F. Thompson of the agricultural department estimates the total value of the annual output of eggs in this country at $145,000,000 and the value of poultry at $139,000,000. The value of the combined poultry and egg product is thus nearly double that of the precious metals.

Recent statistics show that Iowa easily leads in the production of eggs, its yearly product being 100,000,000 dozen. Ohio comes next with 91,000,000 dozen; Illinois is third with 86,000,000 dozen, and Missouri fourth with 85,000,000 dozen.

A crate of eggs contains thirty dozen. A refrigerator car will carry about 4,000 such crates. Some one fond of figures calculates that to transport the annual egg production of the United States would require a train of cars long enough to reach from Chicago to Washington, 868 miles, and then have a few cars left for another train. If you like to mix your eggs with multiplication and division you can figure out the correct solution of the egg train problem.

Packing Poultry and Eggs.—A single large packing company, the Armour's, has nearly 100 cold-storage warehouses scattered through Iowa, Illinois, Missouri, Kansas, and Nebraska. Most of them are fully equipped with machinery for dressing poultry and employ experts to examine the eggs. A recent writer thus explains what is done there:

The buyer who goes around in a wagon picking up eggs, chickens, and butter from the farms and the country grocers brings his load to one of these cold-storage warehouses, where it is placed in cold rooms until it can be examined. Every egg and every chicken is carefully scrutinized. The eggs are divided into three classes. The "firsts" are packed in cases and shipped by refrigerator cars to Chicago, Omaha, or Kansas City and stored away to remain until they are needed. There are storehouses in Chicago that will contain 350,000 such cases. The "seconds" among the eggs are packed in a similar manner, but are shipped immediately to market, while the "thirds" go to the tanneries and other manufacturing establishments to be used for various purposes.

Poultry is treated in the same way, and spring chickens are stowed away until they are needed to meet the winter demands. The "spring" chickens or "broilers," as they are better known to the market, can be had the year round. This is not entirely due to the cold-storage system, however. The introduction of incubators is responsible for much of it. An incubator can be made to hatch out a brood at any season of the year, and modern poultry farms are so arranged that the chicks can be protected from the cold and fattened in the winter as well as in the spring and summer. Notwithstanding the incubator, October, November, December, and January continue to be the biggest months for buying poultry, while April and May are the largest months for eggs.

It is estimated that 4,000,000 cases, each containing thirty dozen eggs, were stored over last winter in the cold-storage warehouses of the United States, and 100,000,000 pounds of poultry, killed during the fall and early winter, were packed away and preserved for the higher prices of the late winter and spring months. The volume of this business runs up to the enormous total of over $1,000,000,000 a year.

Cold Storage of Eggs.—To-day the prices of eggs are definitely controlled by the cold-storage houses. The demand seems to be always equal to, if not greater than, the supply. It is estimated that every five years the consumption of eggs doubles, and only the success of cold storage keeps down the prices. In cold-storage houses eggs may be kept for an indefinite time as fresh as if they were just laid. The secret of success in this matter lies in careful sorting and packing of the eggs at a uniform temperature.

An old picture in the Dresden gallery represents a Dutch housewife "testing eggs," and shows that the modern method was in vogue more than a hundred years ago, except for the substitution of a strong electric light for the oil lamp. The interior of the egg is examined by the light which shines directly through it. If a perfect ball of rosy red is found floating in clear liquid in a clean shell the egg is fresh. If there is a slight vacuum at one end it is fresh enough for ordinary use. Evaporation has set in, but for cake-making and for many purposes this egg is better than a perfectly fresh one. Finally, when the egg has decomposed, the yolk sticks to the shell; it is stale and unfit for use, though it may not be odorous. Eggs which this test shows to be practically fresh may have been laid for months, while those that have not been properly stored will not bear "candling," though laid only a few weeks before.

The cold-storage houses begin to store eggs in February and stop storing after June until cold weather comes again. In the hot, sultry

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weather of August eggs, like all other perishable products, spoil easily, and are usually unfit for storage purposes by the time they reach market.

The first eggs to reach the great packing houses come from the far South. In March the Middle States send in their eggs for storage. In April and May eggs from the North and Eastern states reach market in great quantities. Before the end of June there are often a thousand carloads in market to be stored for the dull season "when hens will not lay."

At these packing houses the temperature is kept at thirty degrees Fahrenheit by means of pipes through which brine circulates, just as steam does in modern houses. The secret of storing eggs successfully consists in keeping them at two degrees below freezing point, in surroundings of spotless cleanliness, and in sorting those that have begun to be stale from the strictly fresh.

Preparing Poultry for Market.—The *American Cultivator* says a poultryman of Sydney, Ohio, has a contract with a Cleveland commission firm to furnish 100 dozen eggs each day, with the date stamped on them. The contract price is 20 cents a dozen. It is certainly worth this man's while to have his hens attend strictly to business, as they are evidently doing, for he is filling his orders as regularly as clockwork.

This same man has a different contract with another firm. He agrees to furnish daily 300 young chickens weighing one and one-half pounds each, for eating purposes. He gets $3 per dozen for these broilers. He manages to keep up with this big undertaking by using thirty improved incubators, that are not all filled at the same time, but are proportioned so that some of them can discharge fresh chicks each day. A large and competent flock of barred Plymouth Rock hens are kept constantly on duty laying eggs with which to stock these hatching machines, and 450 eggs are placed in them each day.

In connection with the incubators there is a row of pens numbered from one to ninety. Each day the little chicks from the machines are turned into the first pen. They are advanced one pen each day, and when the last one is reached they are ninety days old, weigh one and one-half pounds, and are ready for the market. They are herded from the incubators through all of the pens without being touched until they are ready for the frying pan. A certain proportion of the eggs do not hatch, nor do all that are hatched live to make the trip through the ninety pens, but the percentage of loss is

comparatively small, and the breeder finds that the 450 eggs which go into the incubators every day easily net him 300 perfect broilers at the coops, which are shipped to the city daily from pen No. 90. In order to carry out this system and meet his contract it will be seen that the poultryman has something like 13,000 chicks constantly on hand, to say nothing of the hundreds of dozens of eggs tied up in the incubators, or of the great flock of laying hens that supply the eggs. But he gets to market with his daily order and is reported to be making a profit of $25,000 annually.

Studying the Business.—By intelligent management, not the kind that vaguely wonders what sort of luck they'll have this season, but by a clear understanding of the care of poultry and the various details of the business, poultry raising, even on a small scale, can be made to realize what a shrewd business person would deem enormous profits, often as high as 75 or 80 per cent.

To furnish proficiency an unusual school has been established at Waterville, N. Y., the Columbia School of Poultry Culture, with college and university graduates on its faculty and special courses in the care of waterfowl, geese-growing, turkeys, pheasants, guinea and pea fowls, pigeons, and bees, in addition to the regular course with chickens. This school is conducted in connection with a poultry plant that annually raises 5,000 chicks and winters 2,000 layers.

International Egg Trade.—The 1901 issue of the *Yearbook of Agriculture* reported more than 233,000,000 chickens on farms in the United States, and while this poultry and its egg products are mostly for the home market, yet we make large exports of eggs. The United Kingdom, the largest importer of poultry and eggs in the world, buys in nearly twenty countries about 40 per cent of the eggs consumed there. Russia is rated as the largest exporter of eggs in the world. Japan imports many from China, where they are cheap. Denmark has a large export egg trade. Many Danish eggs are marked on the shell with a stamp so the person selling them can be identified if they are inferior. Italy is a large egg exporter.

It is only recently that we in the United States considered it worth while to impose a duty on foreign eggs, and when that was done it was rather to make our tariff schedule symmetrical than because of any conviction that it was necessary.—*Intelligence*, March 15, 1904.

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EDITORIAL

CLUBS OF GEOGRAPHY TEACHERS

MANY teachers have returned from their summer vacations full of enthusiasm for geography because they have visited a new and interesting region, or have come under the inspiration of a leader at some summer school or teachers' institute. They are full of a desire to make their work in geography more efficient and to do something to make the value of geography more appreciated in their community.

One very helpful way in which advance can be brought about is through the formation of a club composed of all the teachers in a community who are especially interested in geography. Such clubs have been formed in many places and have proved of great value not only to the teachers interested, but their work has helped the whole community. A club to be effective should be as simply organized as possible. There should be no long lists of officers, and the initial plans should be simple and easily accomplished. A leader or a committee to plan work and keep the movement going, and subcommittees to carry on special lines of work, is probably the most effective organization at the beginning. With increased strength and increased confidence the plans of work may be elaborated.

The chief advantage of such organizations is the opportunity for exchanging ideas as to ways of teaching and of becoming better acquainted with one's colleagues. The opportunities for mutual help are, however, almost unlimited. The different committees can bring to each meeting brief summaries of the literature pertaining to the different fields in which the individual members are interested. Such summaries should be presented in such a form that others may readily make use of the references in their class work. Maps and illustrations should be reviewed in the same way, for no geography teaching can be effective unless based on the best maps and a few of the best pertinent illustrations.

Another way in which such a club can be of help to the individual members and to the community is by furnishing suggestions to the officials of the town or city library as to the purchase of geographical books for general use. The club can also help by summarizing such books and bringing them to the attention of pupils and parents by notices posted on the school or library bulletin boards, or both. Many libraries contain many books of great value geographically, but

are little used for geographic reference because the resources are unknown. Many librarians neglect geography or, in their innocence, buy books that can only be classified geographically as trash, and would be glad of interested advice even though it be partial.

The opportunities also of helping in organizing a strong course of study in geography, and in planning and conducting excursions for pupils and teachers, are almost limitless in any locality. In fact any club will find so much to do that the danger is they will do little through trying too many things at once.

There are two primary facts that must be borne in mind by any club: First, that a few things well done are more beneficial than many things just touched superficially; and, second, that geography is a wide subject and should be treated as such. In spite of our school texts and the advance along certain lines in America within the last few years, geography is not all physical geography or economic geography. Geography, as a subject of discipline or of culture, is many-sided, and no student of geography, and particularly no teacher of school geography, can afford to become so much of a specialist in one branch as to neglect all reference to the other sides of what may be called general geography.

The editors of the JOURNAL will be glad to know of the organization of Teachers' Geography Clubs, and will help in the work in any ways they can.

REVIEWS

Commercial Geography of the World Outside the British Isles. By A. J. Herbertson. Pp. 268. London and Edinburgh: W. & R. Chambers, 1903.

Herbertson's "Commercial Geography of the World" is a companion volume to his "Commercial Geography of the British Isles," published in 1899, and noted in this Journal, Vol. IV (old series), p. 38.

Teachers in America are, or should be, acquainted with many contributions to Educational Geography from the pen of Dr. Herbertson, primarily for use in the United Kingdom, but of great value in America. This latest volume from his pen is not as serviceable in America as some of his other volumes, but is a good book of reference for all.

The first fifty-seven pages form an excellent summary of the general principles of geography necessary as a basis for the understanding of regional commercial geography to which the rest of the book is devoted. These introductory chapters are well arranged, simple and readable, and remind one of his excellent and indispensable volume entitled "Man and His Work."

The chapters devoted to Regional Commercial Geography are simple and logically arranged, but for American teachers are not as serviceable as several of the commercial geographies by American authors.

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The book lacks maps, diagrams, and illustrations, but contains an excellent index. It should be found in every large school library. R. E. D.

The Land of Little Rain. By Mary Austin. Pp. 281. Boston: Houghton, Mifflin & Co., 1903.

Miss Austin's "Land of Little Rain" is not a volume that would usually be ranked as a book for teachers and contains little that could be used for reference in class work in the schools. It is, however, one of the most interesting contributions to the descriptive geography of the United States of recent years, and should be read by all who care to know about the southwestern United States. It gives no statistics and does not describe regions we all know something about, but it presents the first truthful description of the desert we have read. Others have written most readable and accurate accounts of the deserts of the Southwest, but Miss Austin is the first adequately to present the strong hold the desert gets over any one who comes to know it, and to depict the beauties of the desert so that you feel that she has become a part of it and is not looking at it with the eyes and feelings of one who is at home only in a humid atmosphere.

The marginal sketches and full-page illustrations are thoroughly in accord with the text, and the book as a whole is most interesting reading, not only for its content but for the excellent style of the author. R. E. D.

RECENT PUBLICATIONS

Early Western Travels, 1748-1846. Edited by Reuben Gold Thwaites. Cleveland, Ohio: Arthur H. Clark Company, 1904.

Vol. III, pp. 382, contains reprints of Journals of Travels into Kentucky, by André Michaux; of Travels to the West of the Allegheny Mountains, by François André Michaux; of a Tour into the Territory Northwest of the Allegheny Mountains, by Thaddeus M. Harris.

Extremely interesting accounts of early life in Pennsylvania and the states to the west, containing descriptions of country, of plants and animals, and of early conditions in cities which are now famous.

Vol. IV, pp. 377. Sketches of a Tour through the States of Ohio and Kentucky; A Voyage Down the Ohio and Mississippi Rivers, etc.

Very readable and effective account of the vicissitudes of travel by boat in the early part of the 19th century. Of interest to all who like to study the progress of their own country.

Vol. V, pp. 320. Bradbury's Travels into the Interior of America.

Excellent account of Upper Louisiana in 1809–11, with especial emphasis of Indian life and of the natural history of the region. Written by an observing scientist and pleasingly presented.

Outlines in United States Geography. By Inez N. McFee. Pp. 166. Dansville, N Y.: F. A. Oliver Publishing Company, 1903.

An outline arranged for teaching the United States, especially adapted to teachers using the Frye or Natural Geographies. Contains some good suggestions on the use of maps and molding board, and includes much that is non-essential and "curious." Divides the United States into drainage basins as a basis for treating the geography as a whole. Outline is rather formal and dry, but is suggestive.